

**LOW NOISE LEVEL SHIFTING CIRCUITS
AND METHODS AND SYSTEMS USING THE SAME**

ABSTRACT:

[0030] A driver circuit includes an operational amplifier having an input and an output coupled by a feedback element. A voltage level shifter generates a voltage drop from the operational amplifier output to the operational amplifier input with a current source transistor setting a current controlling the voltage drop across the feedback element. A chopper circuit shifts flicker noise generated by the current source transistor to a higher frequency spectrum.

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